



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/698,387

11/03/2003

Haruyuki Kometani

Q78249

2734

23373

7590

05/13/2004

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

NGUYEN, TRAN N

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

10/698,387

Applicant(s)

KOMETANI ET AL.

Examiner

Tran N. Nguyen

Art Unit

2834

JAN

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-5 and 8-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yonetani et al (JP Pub 2001-218395)** in view of level of ordinary skills of a worker in the art.

Yonetani substantially discloses the claimed invention, particularly the claw poles are configured with stair-shape (figs 1, 5, 6, 10, 12). In two various embodiments, Yonetani discloses the claw poles are configured with stair-shape having chamfered portions at step parts and tip parts (figs 5, 10). Yonetani discloses the specific widths of each of step portions in the stair shaped pole claws.

Yonetani substantially discloses the claimed invention, except for the limitations of the clearance D_C range; and the magnetic pole width D_a and D_b ranges, as recited in the claimed invention.

Those skilled in the art would understand that the important teaching of Yonetani is to form the claw poles with stair shape having specific widths of each of step portions thereof would

effectively suppress abnormal sound by reducing harmonic components that can become electromagnetic noise (taught by Yonetani).

Thus, by applying this essential teaching concept, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor's claw poles structure and arrangement so that the rotor claw poles would have the clearance D_C range, and the magnetic pole width D_a and D_b ranges, as recited in the claimed invention. Doing so would further enhance the effect of suppressing abnormal sound by reducing harmonic components that can become electromagnetic noise. Also, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

3. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yonetani** and level of ordinary skills in the art, as applied in the rejection of the base claim, and further in view of **York** (US 6,555,944).

Yonetani discloses the claimed invention, except for the limitations of ring-shaped coupling members, as in claims 6-7.

York, however, teaches these features (62, figs 2-3D) for preventing the outward deflection of the flanged magnetic poles during rotation. This keeps the flanged magnetic poles from contacting the stator. Regarding the coupling members are saturated by the magnetic flux, i.e., the coupling members are formed of magnetic permeable material, those skilled in the art would realize that this is a matter of obvious engineering design choice to select a suitable material for the components, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor's claw poles by providing ring-shaped coupling members, as taught by **York**. Doing so would prevent the outward deflection of the flanged magnetic poles during rotation and keep the flanged magnetic poles from contacting the stator of the alternator.

Double Patenting

The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and © may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5, 8-14 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-6 of U.S. Patent 6,404,096 B1** (hereafter, **USP '096**) in view of level of ordinary skill of a worker in the art.

Claims 1-6 of USP '096 are similar to claims 1-5, 8-14 of this application. The patent and the application particularly have the common claimed subject matters:

An alternating current generator for vehicle, comprising:

- a stator core in which a three-phase (i.e., multi-phase) stator coil;
- a first rotor core and a second rotor core which are provided in the side of an inner diameter of said stator core and rotate with a rotating shaft,
- a field coil for magnetizing said first and second rotor cores in different magnetic poles, and

a plurality of magnetic poles, which are provided so as to extend to an axial direction of said rotating shaft from said first and second rotor cores and are arranged so as to have engagement alternately through predetermined gaps between said magnetic poles and are opposite to the surface of the inner diameter of said stator core through an air gap, wherein

said magnetic poles have a plurality of parts in the axial direction and are stepwise formed and the respective parts are set to different widths in a rotational direction, so that a pitch of the rotational direction between centerlines of the gaps between said adjacent magnetic poles is configured so as to change stepwise in the axial direction; and, wherein:

corners formed by the surface opposite to the inner diameter of said stator core of said magnetic poles and both sides of the rotational direction are chamfered;

the number of slots per phase every pole provided in said stator core is one;

the number of slots per phase every pole provided in said stator core is two.

The differences between the patent and the application are as the recitations of the limitations of the clearance D_C range, and the magnetic pole width D_a and D_b ranges, as recited in the claimed invention.

Those skilled in the art would understand that the important teaching of Yonetani is to form the claw poles with stair shape having specific widths of each of step portions thereof. The claw pole configuration would effectively suppress abnormal sound by reducing harmonic components that can become electromagnetic noise.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor's claw poles structure and arrangement so that the rotor claw poles would have the clearance D_C range, and the magnetic pole width D_a and D_b ranges, as recited in the claimed invention. Doing so would further enhance the effect of suppressing abnormal sound by

Art Unit: 2834

reducing harmonic components that can become electromagnetic noise. Also, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

4. **Claims 1-5, 8-14** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-4 of USP 6,531,803** (hereafter **USP' 803**)

Claims 1-4 of USP '803 are similar to claims 1-5, 8-14 of this application, except for the of *the limitations of the clearance D_C range, and the magnetic pole width D_a and D_b ranges, as recited in the claimed invention.*

By the same token as above, those skilled in the art would understand that the important teaching of Yonetani is to form the claw poles with stair shape having specific widths of each of step portions thereof. The claw pole configuration would effectively suppress abnormal sound by reducing harmonic components that can become electromagnetic noise.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor's claw poles structure and arrangement so that the rotor claw poles would have the clearance D_C range, and the magnetic pole width D_a and D_b ranges, as recited in the claimed invention. Doing so would further enhance the effect of suppressing abnormal sound by reducing harmonic components that can become electromagnetic noise. Also, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

5. **Claims 6-7** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-6 of USP '096**, or alternately, **claims 1-4 of USP '803** and level of ordinary skill of a worker in the art, and further in view of **York (US 6,555,944)**.

Each of the combinations of each prior-art patent and skills in the art discloses the claimed invention, except for the limitations of ring-shaped coupling members, as in claims 6-7.

Art Unit: 2834

York, however, teaches these features (62, figs 2-3D) for preventing the outward deflection of the flanged magnetic poles during rotation. This keeps the flanged magnetic poles from contacting the stator. Regarding the coupling members are saturated by the magnetic flux, i.e., the coupling members are formed of magnetic permeable material, those skilled in the art would realize that this is a matter of obvious engineering design choice to select a suitable material for the components, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the rotor's claw poles by providing ring-shaped coupling members, as taught by York. Doing so would prevent the outward deflection of the flanged magnetic poles during rotation and keep the flanged magnetic poles from contacting the stator of the alternator.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N. Nguyen whose telephone number is (571) 272-2030. The examiner can normally be reached on M-F 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tran N. Nguyen

Primary Examiner

Art Unit 2834